

NEW JAPANESE FUNGI

NOTES AND TRANSLATIONS—IX

TYÔZABURÔ TANAKA

HELMINTHOSPORIUM PAPAVERI K. Sawada sp. nov. in Taiwan Hakubutsu Gakkwai Kwaihô (Journ. of Formosan Nat. Hist. Soc.) No. 31: 129, T. 6, xii, Dec., 1917, and in Bull. No. 128, Agric. Exp. Stat., Gov'nt of Formosa, "Taiwan ni okeru Keshi Byôgai Chôsa" (Diseases of poppy in Formosa) by K. Sawada, pp. 20-22, T. 7, vi, June, 1918. (Japanese.)

Conidiophores fasciculate or solitary, copiously branched, cylindrical, many septate, yellowish-brown, $86-130 \times 6-7 \mu$, terminating with a single conidium, after its abstriction a second conidium is formed; conidia cylindrical, both ends blunt, 3-10 septate, constricted, yellowish-brown, $22-112 \times 7-11 \mu$.

Parasitic on leaves, stems, peduncles and fruits of *Papaver somniferum*.

On leaves, spots are large, irregular, brown and pierced at the center when fully matured. On stems, the lesions causing rot are brown, and, when they are formed at the lower part, cause wilting of the whole plant; the decay soon appears at the petiole of leaves turning them to a dirty yellowish-brown color. The stem tissues, including cortex, are entirely disorganized and dead; at a certain stage a gray mould is found on the decayed surface. The appearance on the peduncles is similar to that on the stems. When the fruits are attacked the spots are orbicular, yellowish-brown or brown bordered with a blackish-brown periphery, and later develop gray mould from the center, which occasionally appears in concentric zones. No sound seed is produced from the diseased fruits. It is one of the most dangerous diseases of cultivated poppies in Formosa.

Type localities: Taihoku-chô Taihoku, Apr. 25, 1917, Funabiki; Taihoku-chô, Chônaihoshô, Apr. 21, 1917, K. Sawada.

Notes: Additional localities are recorded from Taichû-chô Koroton, June 8, 1918, K. Sawada; Nantô-chô Nantô, June 6, 1918, K. Sawada; Kagichô Chikutôki, Apr. 3, 1918, K. Sawada. (See second paper, p. 21.) After inoculation tests, the damping-off of poppy seedlings is proved to have been caused by the same fungus. This trouble was found by the author in nurseries of southern Formosa.

FUSICLADIUM THEAE K. Hara sp. nov. in Chagyôkawi (Tea Journal) 14⁴: 16-17, 1 pl. T. 8, iv, Apr., 1919. (Japanese.)

Acervuli amphigenous, velvety, black; conidiophores filiform, straight or curved, thickened at the base, continuous to 3-septate, brownish at the lower part, light colored and often crooked at the upper part $40-70 \times 4-5 \mu$; conidia terminal, occasionally arising from the crooked edges of conidiophores, cylindrical or oblongovate, uniseptate almost at the middle, usually not constricted though sometimes constricted, blunt at the apex, somewhat pointed at the base, straight or curved, colorless or flavescent, $15-28 \times 5-6 \mu$.

On leaves of *Thea sinensis*.

Type locality: Shidzuoka-ken Iwara-gun Kjiro-chô, Nov. 27, 1918, K. Hara.

Illustrations: 2 black and white halftone figures (figs. 8 and 9) showing tufts of conidiophores and conidia.

No *Fusicladium* has been reported on tea plant. This species is distinct from all known species by its almost colorless conidia.

MYCOSPHERELLA THEAE K. Hara sp. nov. in Chagyôkwai (Tea Journal) 14⁵: 9-10, 1 pl., T. 8, v, May, 1919. (Japanese.)

Spots orbicular or irregularly roundish, 3-4 mm. in diam., finally confluent, forming large irregular lesions, at first dark-brown, later becoming cinereous; perithecia epigenous, immersed, later with ostiola erumpent, gregarious, minutely punctiform, black, globose or depressed globose, $50-150 \mu$ in diam.; well carbonaceous, fungoid-parenchymatous, dark-colored, composed of polygonal cells, $3-8 \mu$ across; ostiola papillate or wart-like, with orbicular openings $10-13 \mu$ across; asci tufted, cylindrical clavate or oblongovoid, rounded at the apex, pedicellate at the base, octosporous, $30-42 \times 6-8 \mu$; ascospores biseriate, oblong-ovoid or cylindrical, both ends subobtuse, uniseptate, not constricted, cells unequal, upper ones being slightly shorter and broader, lower

ones much longer and narrower, every cell binucleate at first, later becoming homogenous, hyaline, $10-13 \times 2-2.5 \mu$.

Parasitic on leaves of *Thea sinensis*.

Type locality: Gifu-ken Ena-gun Kawaue-mura, Apr., 1918, K. Hara.

Illustrations: 4 black and white halftone figures (figs. 5-6) showing spots, perithecia, asci and ascospores.

It differs from *Mycosphaerella punctiformis* in mode of occurrence and in detailed characters of ascospores.

Spots first appear on the surface of leaves as small, round, dark-colored areas of 1 mm. across, which enlarge gradually forming irregular patches of 3-4 mm. in diam., and later becoming confluent forming large irregular dead areas extending towards the leaf margin. Such areas are dark-colored brownish-gray and develop abundant black minute specks on the upper surface, while the lower surface of the leaf remains a dark-brown color.

MYCOSPHAERELLA IKEDAI K. Hara sp. nov. in Chagyôkwai (Tea Journal) 14⁵: 10, 1 pl., T. 8, v, May, 1919. (Japanese.)

Perithecia amphigenous or more frequently hypogenous, gregarious or scattered, immersed, globose or depressed globose, apically ostiolate $50-80 \mu$ in diam., wall parenchymatous, consisting of polygonal cells $5-8 \mu$ in diam. across, carbonaceous ostiola papillate or simple, with round openings of $10-12 \mu$ across, asci obovoid or oblong, rounded at the apex, pedicellate at the base or sessile, octosporous, $40-45 \times 8-12 \mu$, ascospores 3-stichous or irregularly polyseriate, oblong-ovoid or cylindrical, uniseptate, much constricted, cells unequal, upper ones mostly shorter and broader while lower ones are just opposite, at first granulate, later homogenous, colorless and hyaline, $13.2-16 \times 5-5.5 \mu$.

Saprophytic on leaves of *Thea sinensis*.

Type locality: Shidzuoka-ken Inasa-gun Idaira-mura, Sept., 1918, K. Hara.

Illustrations: 2 black and white halftone figures (figs. 9 and 10) showing asci and ascospores.

M. Ikedai K. Hara differs from the former species in the shape of the asci, arrangement, shape and size of the ascospores. It is

named in honor of Isaji Ikeda, President of the Prefectural Agricultural Society, under whom the investigations were made.

MELIOLA CITRICOLA K. Hara sp. nov. in Shidzuoka-ken Nôkwaihô (Journ. Agric. Soc., Shidzuoka Prefecture) No. 263: 8-9, 1 pl., T. 8, viii, Aug., 1919. (Japanese.)

Young hyphae filiform, delicate, branching, septate, colorless or light colored, $2.5-3\mu$ across, mature hyphae thick, branching, septate, constricted at septa, often catenulate and easily detached, dark-brown, sometimes nucleate, $4-7\mu$ thick, detached cells (chlamydo-spores) ellipsoid or subglobose, $8-15 \times 4-7\mu$; conidia of *Tripodsporium* type astellate with 3-4 arms, arms thick at the base, tapering towards the apex and ending in a sharp point, 2-4 septate, $40-60\mu$, perithecia globose or depressed globose, $200-230\mu$ across, wall naked, fungoid-parenchymatous, carbonaceous, brittle, dark-brown, cells $6-12\mu$ across; ostiola apical, not projecting, with orbicular opening of $15-20\mu$ across, asci obovate globose or ellipsoid, rounded at the apex, pedicellate at the base, thick walled, octosporous, aparaphysate, $40-70 \times 30-40\mu$, ascospores ellipsoid ovoid or subfusoid, tapering towards rounded ends, straight or curved, 6-7 transversely septate, often with longitudinal septa, hyaline, $28-45 \times 7-12\mu$.

Epiphytic on leaves, branches and fruits of *Citrus* spp.

This species appears mostly on the upper surface of leaves producing black or dark gray irregular patches which finally enlarge forming a thick incrustation all over the leaf surface. When fully matured the surface becomes velvety and spotted with minute black bodies and at this stage the black mass begins to peel off from the substratum.

Type locality: Shidzuoka-ken Agricultural Experiment Station, Apr. 25, 1919, K. Hara.

Illustrations: 3 figures (figs. 12-14) in 1 black and white half-tone plate, showing perithecia, asci and ascospores.

It differs from *Limacinia theae* P. & H. Sydow & Butl. (Ann. Mycol. 9: 346) in the tapering and curved ascospores, intertwining hyphae without bristles, and in the absence of a particular pycnidial form. *Meliola penzigi* Sacc. resembles the present species in having naked perithecia, but the former is characterized by colored biseriate ascospores having 3 transverse and 1-2 longitudinal septa, while the latter is distinguished by heaping

non-seriate ascospores ellipsoid in shape and usually 7-septate, in size three times as large as the former. *Meliola camelliae* and *Meliola citri* do not agree with the present species in their bristled perithecia and in the size and shape of the ascospores.

GLOEOSPORIUM CARTHAMI Hori & Hemmi comb. nov. in Byôchûgai Zasshi (Journ. Plant Prot.) 6³: 189, T. 8, iii, March, 1919. (Japanese.)

Marsonia carthami Fukui, ex Tanaka in Mycologia 9³: 169, 1917.

Hemmi points out that the fungus has typically 1-celled ascospores, and should correctly be placed under *Gloeosporium* (subgen. *Colletotrichum*). In a later publication of the same author (Annals of the Phytopath. Soc. of Japan, 1²: 1-11, March, issued June, 1919) the detailed characters of this fungus are thoroughly given in German. The disease was reported from Sapporo and Hyôgo, and is pretty serious in early summer months. The temperature relations of the development of this fungus are also given by Hemmi in Sapporo Nôrin Gakkwai-hô 10⁴⁷: 40, 49-52, Dec., 1918.

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